

But if the impressions follow one another so quickly that they cannot be severally perceived, there ariseth out of them all one common sensation, which is neither of this Colour alone nor of that alone, but hath it self indifferently to 'em all, and this is a sensation of whiteness. By the quickness of the successions the impressions of the severall Colours are confounded in the Sensorium, and out of that confusion ariseth a mixt sensation. If a burning Coal be nimblely moved round in a Circle with Gyration continually repeated, the whole Circle will appear like fire; the reason of which is, that the sensation of the Coal in the severall places of that Circle remains impress'd on the Sensorium, until the Coal return again to the same place. And so in a quick consecution of the Colours the impression of every Colour remains in the Sensorium, until a revolution of all the Colours be compleated, and that first Colour return again. The impressions therefore of all the successive Colours are at once in the Sensorium, and joyntly stir up a sensation of them all; and so it is manifest by this Experiment, that the commixt impressions of all the Colours do stir up and beget a sensation of white, that is, that whiteness is compounded of all the Colours.

And if the Comb be now taken away, that all the Colours may at once pass from the Lens to the Paper, and be there intermixed, and together reflected thence to the Spectators Eyes; their impressions on the Sensorium being now more subtilly and perfectly commixed there, ought much more to stir up a sensation of whiteness.

You

You may instead of the Lens use two Prisms HIK and LMN, which by refracting the coloured Light the contrary way to that of the first refraction, may make the diverging rays converge and meet again in G, as you see it represented in the seventh Figure. For *Fig. 7.* where they meet and mix they will compose a white Light as when a Lens is used.

EXPER. XI.

Let the Sun's coloured Image PT fall upon the Wall *Fig. 8.* of a dark Chamber, as in the third Experiment of the first Book, and let the same be viewed through a Prism abc, held parallel to the Prism ABC, by whose refraction that Image was made, and let it now appear lower than before, suppose in the place S over against the red colour T. And if you go near to the Image PT, the Spectrum S will appear oblong and coloured like the Image PT; but if you recede from it, the Colours of the Spectrum S will be contracted more and more, and at length vanish, that Spectrum S becoming perfectly round and white; and if you recede yet further, the Colours will emerge again, but in a contrary order. Now that Spectrum S appears white in that case when the rays of severall sorts which converge from the severall parts of the Image PT, to the Prism abc, are so refracted unequally by it, that in their passage from the Prism to the Eye they may diverge from one and the same point of the Spectrum S, and so fall afterwards upon one and the same point in the bottom of the Eye, and there be mingled.

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